

4E. INJURIES IN SAND AND GRAVEL MINING

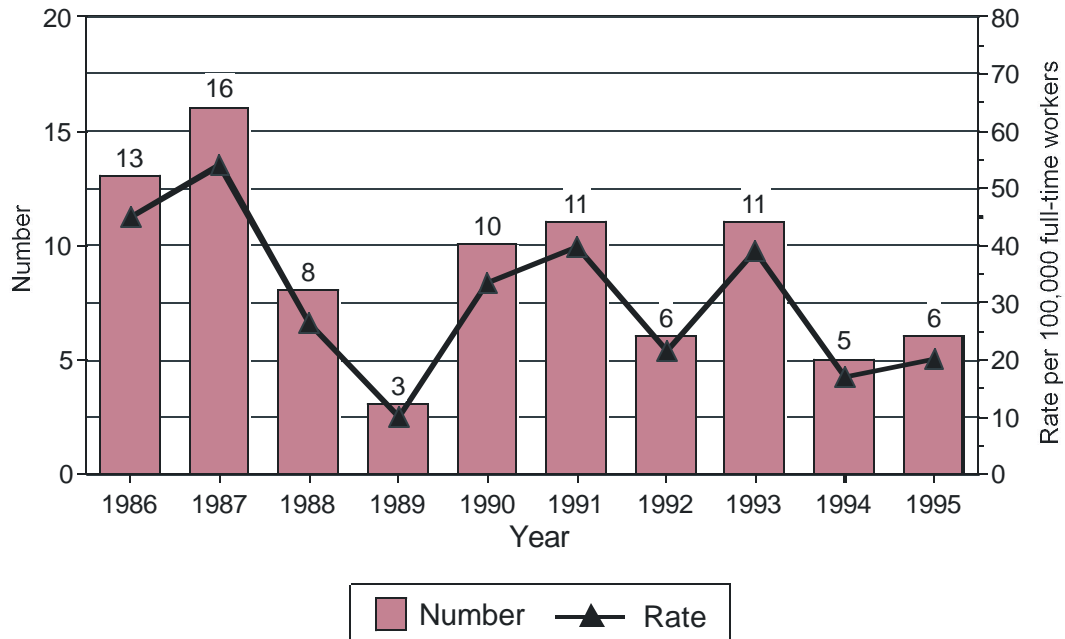


Figure 4E-1.—Sand and gravel operators: number and rate (per 100,000 workers) of fatal injuries by year, 1986-1995. (Source: MSHA data)

Table 4E-1.—Sand and gravel operators: number and average annual rate (per 100,000 workers) of fatal injuries by subunit, 1986-1995.

<u>Mining operation</u>	<u>Number, 1986-1995</u>	<u>Average annual rate per 100,000 full-time workers</u>
Surface mines:		
Strip	67	27.3
Dredge	22	47.3
Office	0	*
Total	89	26.2

* Rate not calculated because there were fewer than 3 fatalities.

Source: Mine Safety and Health Administration data.

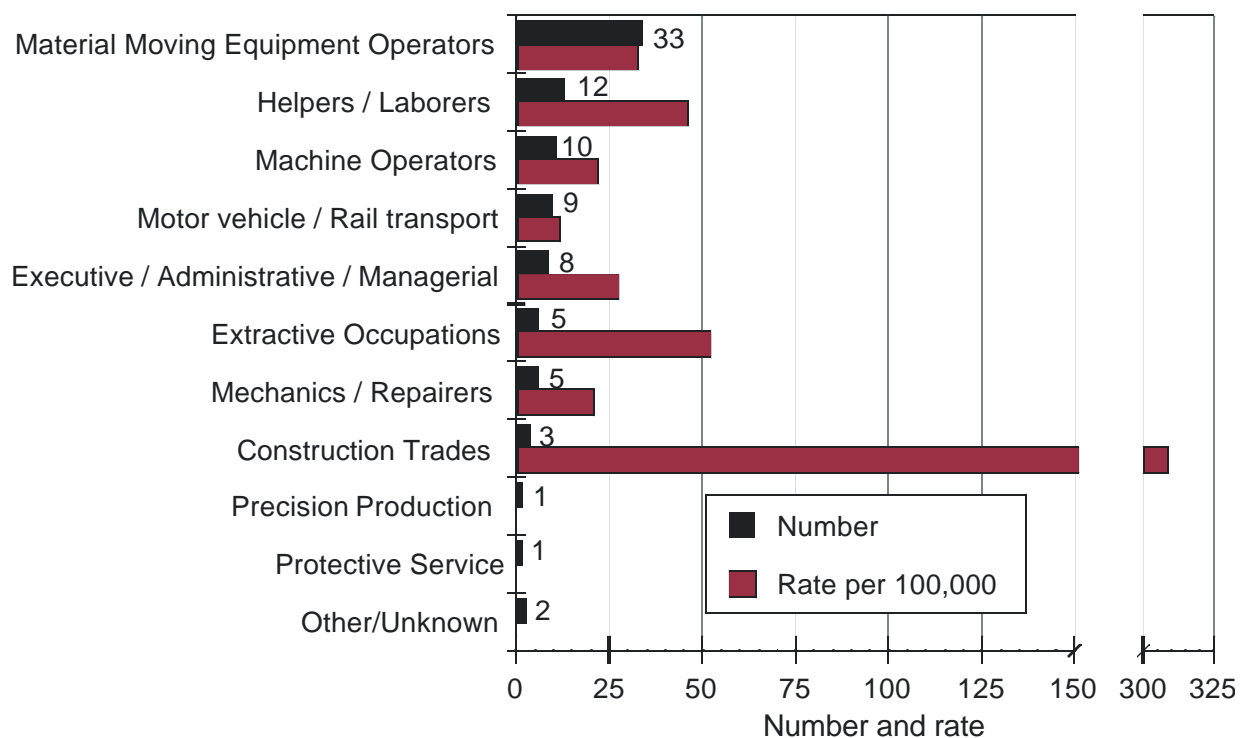


Figure 4E-2.—Sand and gravel operators: number and rate (per 100,000 workers) of fatal injuries by U.S. Bureau of the Census Occupation Division, 1986-1995. (Source: MSHA data)

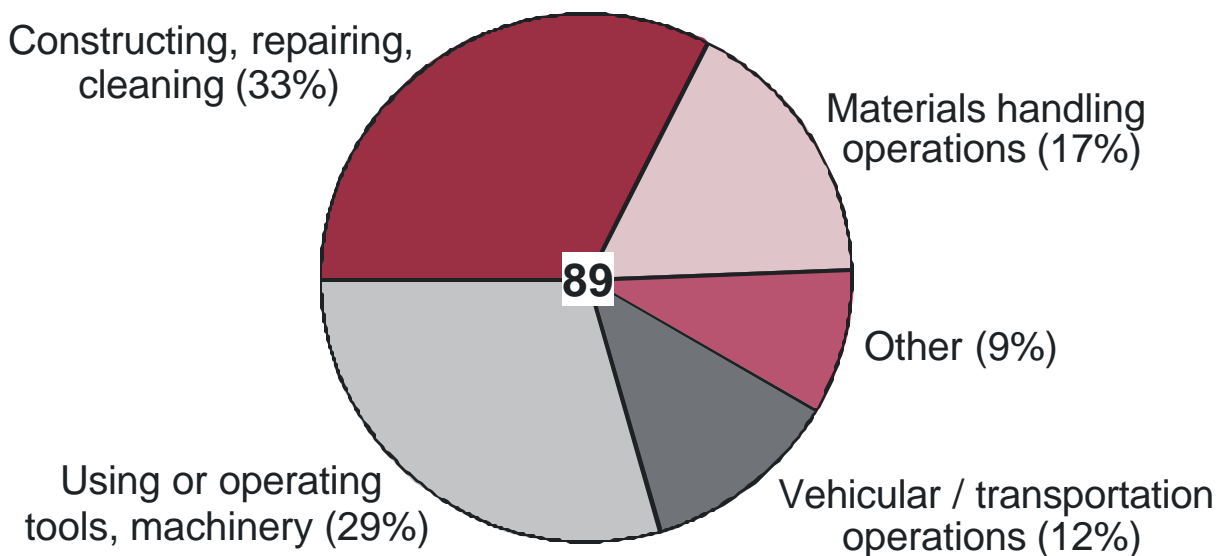


Figure 4E-3.—Sand and gravel operators: number of fatal injuries by work activity, 1986-1995. (Source: MSHA data)

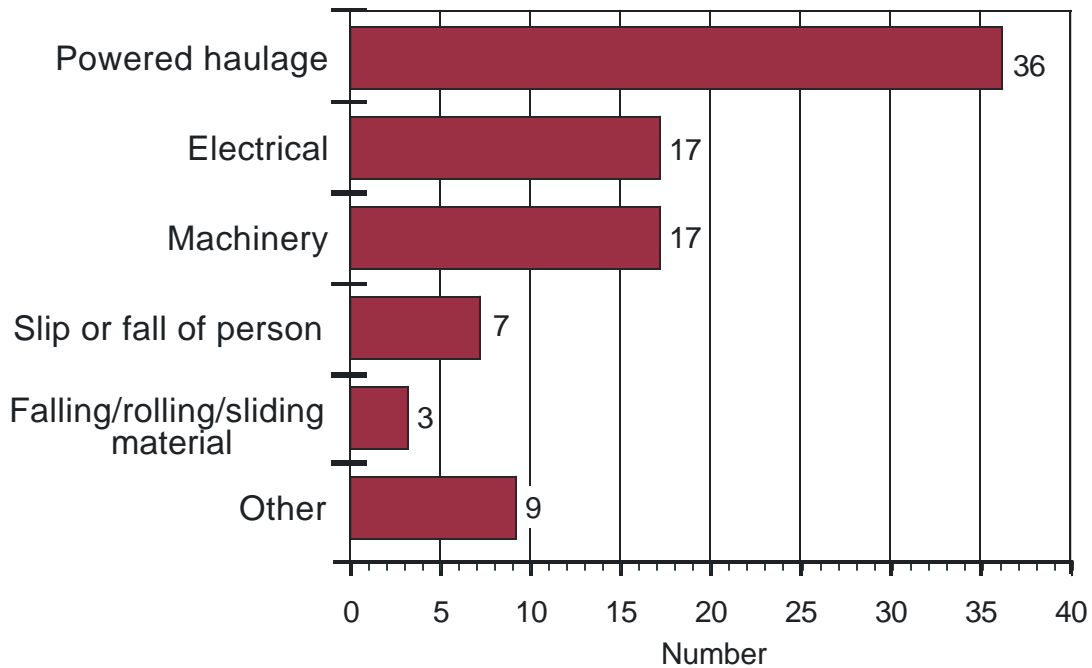


Figure 4E-4.—Sand and gravel operators: number of fatal injuries by MSHA accident classification, 1986-1995. (Source: MSHA data)

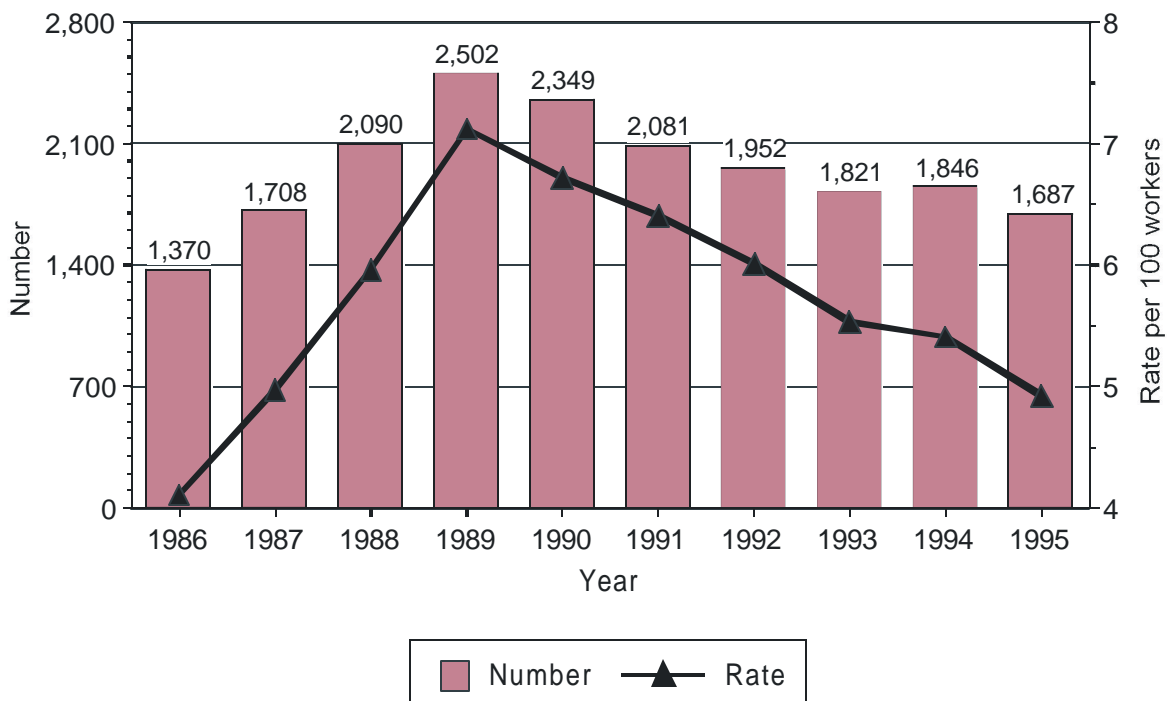


Figure 4E-5.—Sand and gravel operators: number and rate (per 100 workers) of nonfatal injuries by year, 1986-1995. (Source: MSHA data)

Table 4E-2.—Sand and gravel operators: number and average annual rate (100 workers) of nonfatal injuries by subunit, 1986-1995.

<u>Mining operation</u>	<u>Number, 1986-1995</u>	<u>Average annual rate per 100 full-time workers</u>
Surface mines:		
Strip	16,045	6.55
Dredge	3,252	6.99
Office	109	0.23
Total	19,406	5.72

Source. Mine Safety and Health Administration data.

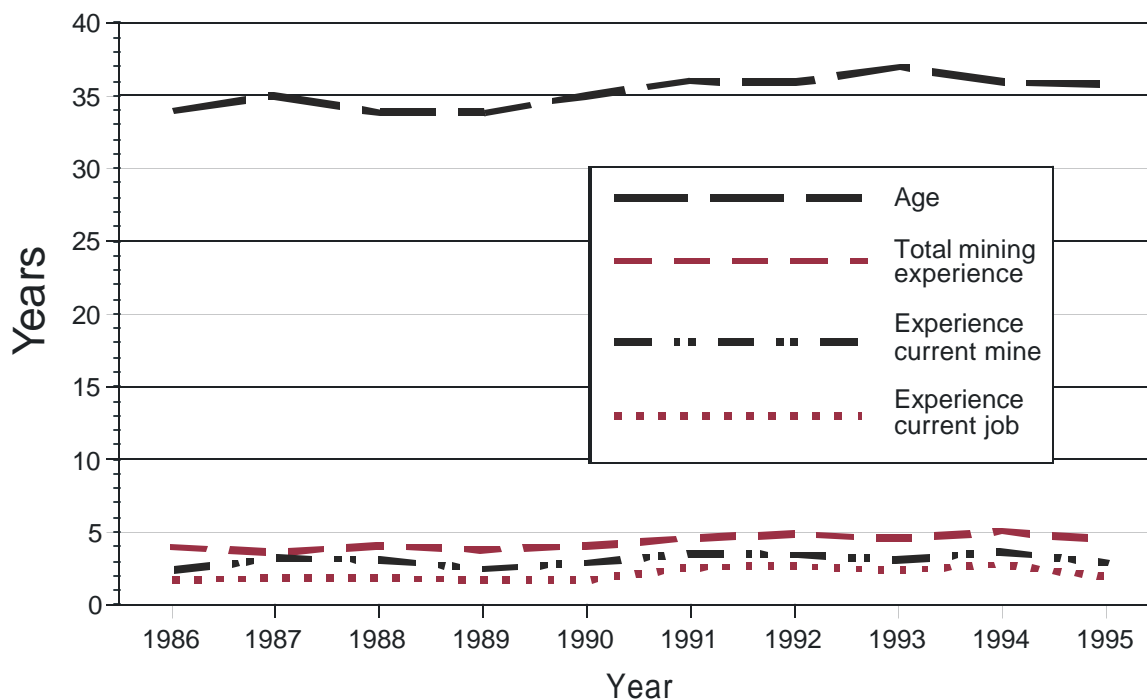


Figure 4E-6.—Sand and gravel operators: median values for age, total mining experience, experience in current mine, and experience in current job for workers with nonfatal injuries by year, 1986-1995. (Source: MSHA data)

Table 4E-3.—Sand and gravel operators: nonfatal injuries, 1986-1995, by nature of injury. Number of cases, percentage of cases with one or more lost workdays, mean days lost work per case, total days work lost for all cases, and statutory days charged for all cases.

Nature of injury	Number of cases	Lost workday cases (%)	Mean days lost work	Total days lost	Total statutory days
Sprains and strains	5,768	71.2	16.08	92,773	7,920
Fracture	1,793	65.1	24.62	44,138	6,800
Contusions	1,775	59.5	8.53	15,135	1,200
Lacerations	4,111	29.9	3.47	14,269	4,018
Amputation, enucleation	173	59.0	23.85	4,126	154,590
Hernia	183	68.9	20.63	3,776	7,700
Crushing	378	48.4	9.84	3,720	3,270
Burn, heat	492	48.2	5.65	2,780	0
Joint, tendon, or muscle inflammation or irritation	111	55.0	17.66	1,960	0
Dislocation	114	62.3	17.11	1,951	6,000
Electric shock	38	76.3	34.11	1,296	6,000
Noncontact electric arc burn	311	60.8	3.77	1,171	0
Dust in eyes	586	29.9	1.23	723	0
Brain concussion	47	87.2	14.55	684	0
Abrasions	252	42.1	1.95	491	0
Electrical burn	23	69.8	18.70	430	0
Burn, chemical	127	55.1	3.02	383	0
Poisoning	141	40.4	2.15	303	0
Other specified causes	300	58.7	12.65	3,795	5,400
Multiple injuries, unspecified	1,539	67.6	20.83	32,043	22,530
Other unspecified injuries	1,144	65.1	18.08	20,679	5,650
Total	19,406	56.6	12.71	246,626	230,878

Source: Mine Safety and Health Administration data.

Table 4E-4.—Sand and gravel operators: nonfatal injuries, 1986-1995, by work activity. Number of cases, percentage of cases with one or more lost workdays, mean days lost work per case, total days work lost for all cases, and statutory days charged for all cases.

Work activity	Number of cases	Lost workday cases (%)	Mean days lost work	Total days lost	Total statutory days
Materials handling	5,115	60.2	12.51	63,967	52,815
Constructing, repairing, or cleaning	4,518	54.2	13.23	59,754	98,590
Using or operating tools or machinery	5,313	46.6	9.04	48,033	42,000
Vehicular and transportation operations	2,412	68.5	16.91	40,798	18,578
Bodily movement	1,477	65.9	16.42	24,256	8,840
Other	417	61.9	16.43	6,851	9,855
Unspecified	154	59.7	19.27	2,967	200
Total	19,406	56.6	12.71	246,626	230,878

Source: Mine Safety and Health Administration data.

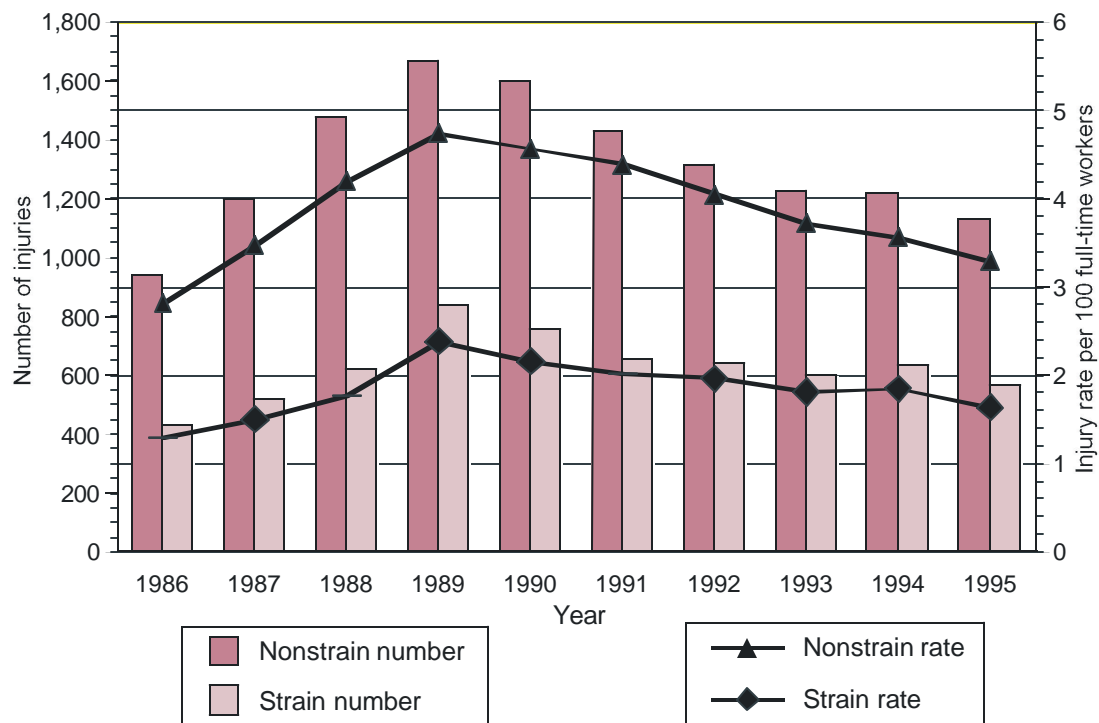


Figure 4E-7.—Sand and gravel operators: nonfatal injuries 1986-1995. Number and rate (per 100 workers) of strain and nonstrain injuries by year, 1986-1995. (Source: MSHA data)

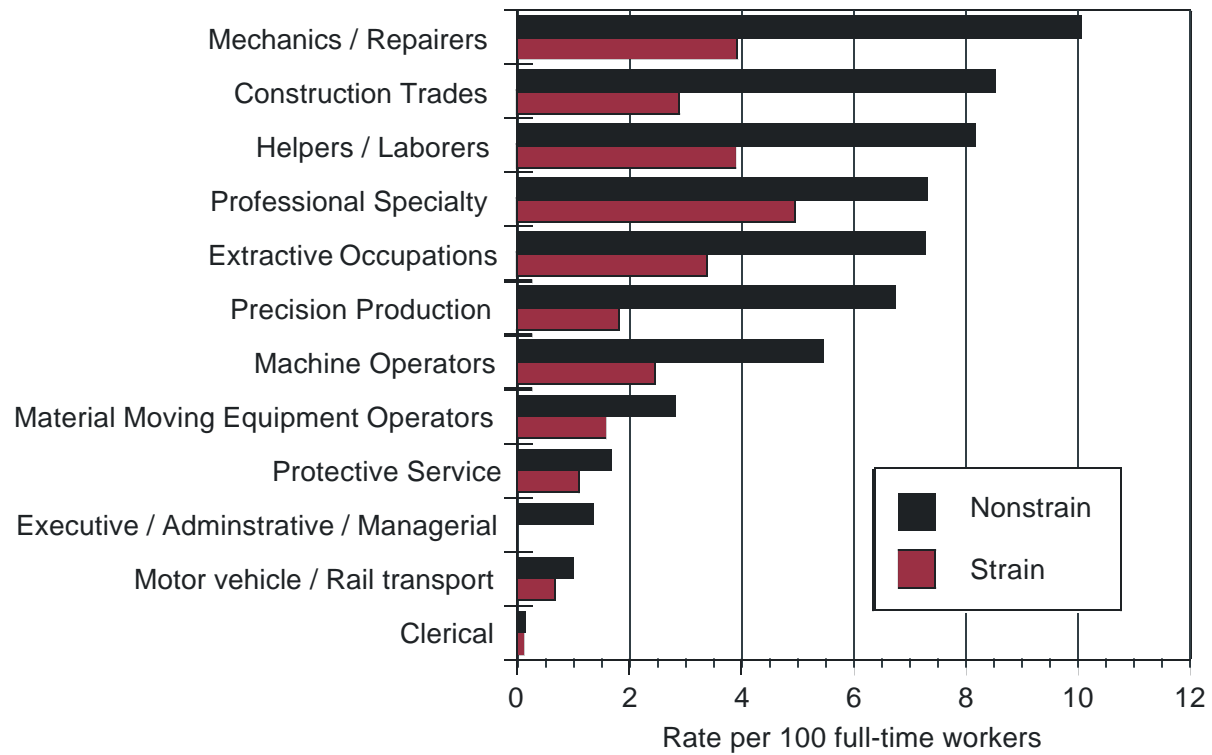


Figure 4E-8.—Sand and gravel operators: nonfatal injuries, 1986-1995. Rate (per 100 workers) of strain and nonstrain injuries by U.S. Bureau of the Census Occupation Division, 1986-1995. (Data on occupations were missing for 610 out of 19,406 cases (3.1%).) (Source: MSHA data)

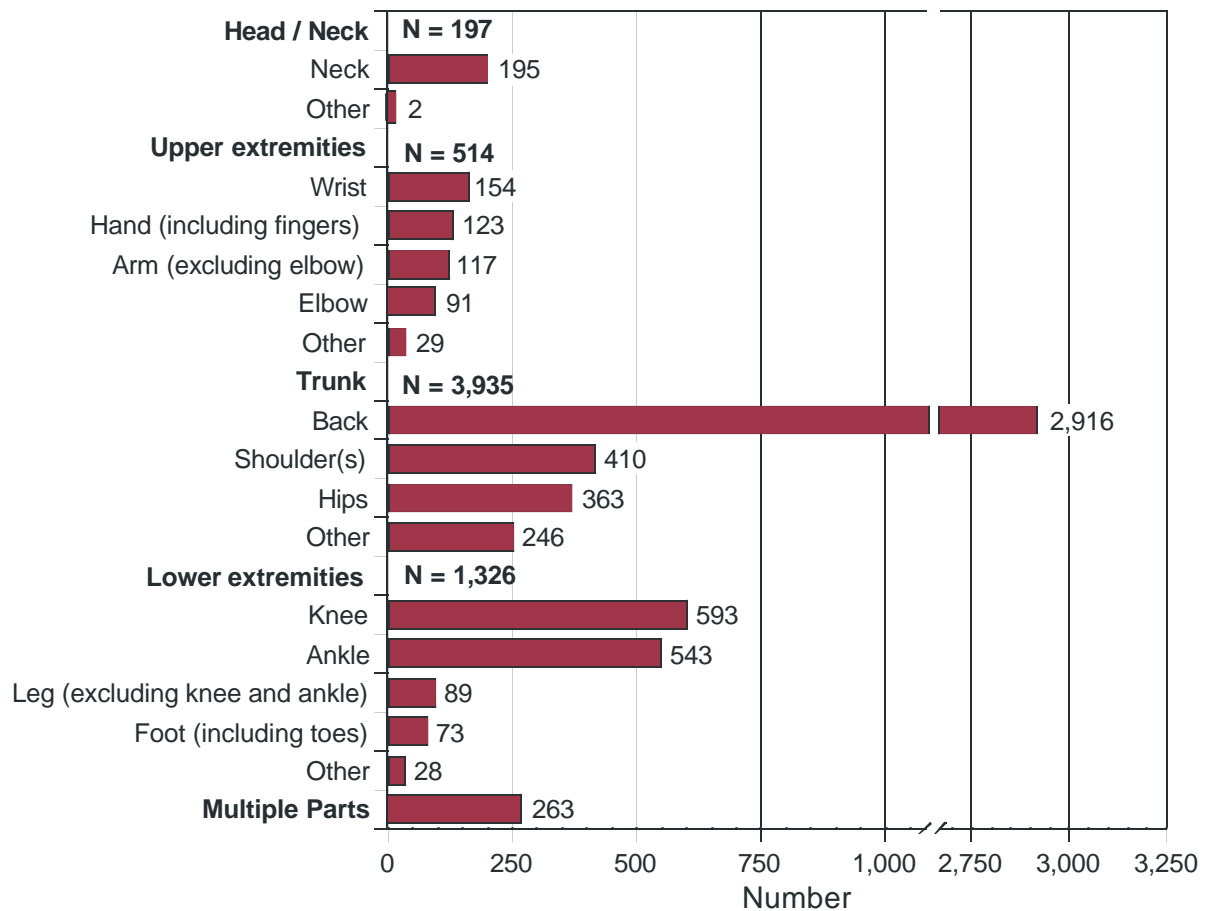


Figure 4E-9.—Sand and gravel operators: number of (nonfatal) strain injuries by body part injured, 1986-1995.
 (Source: MSHA data)

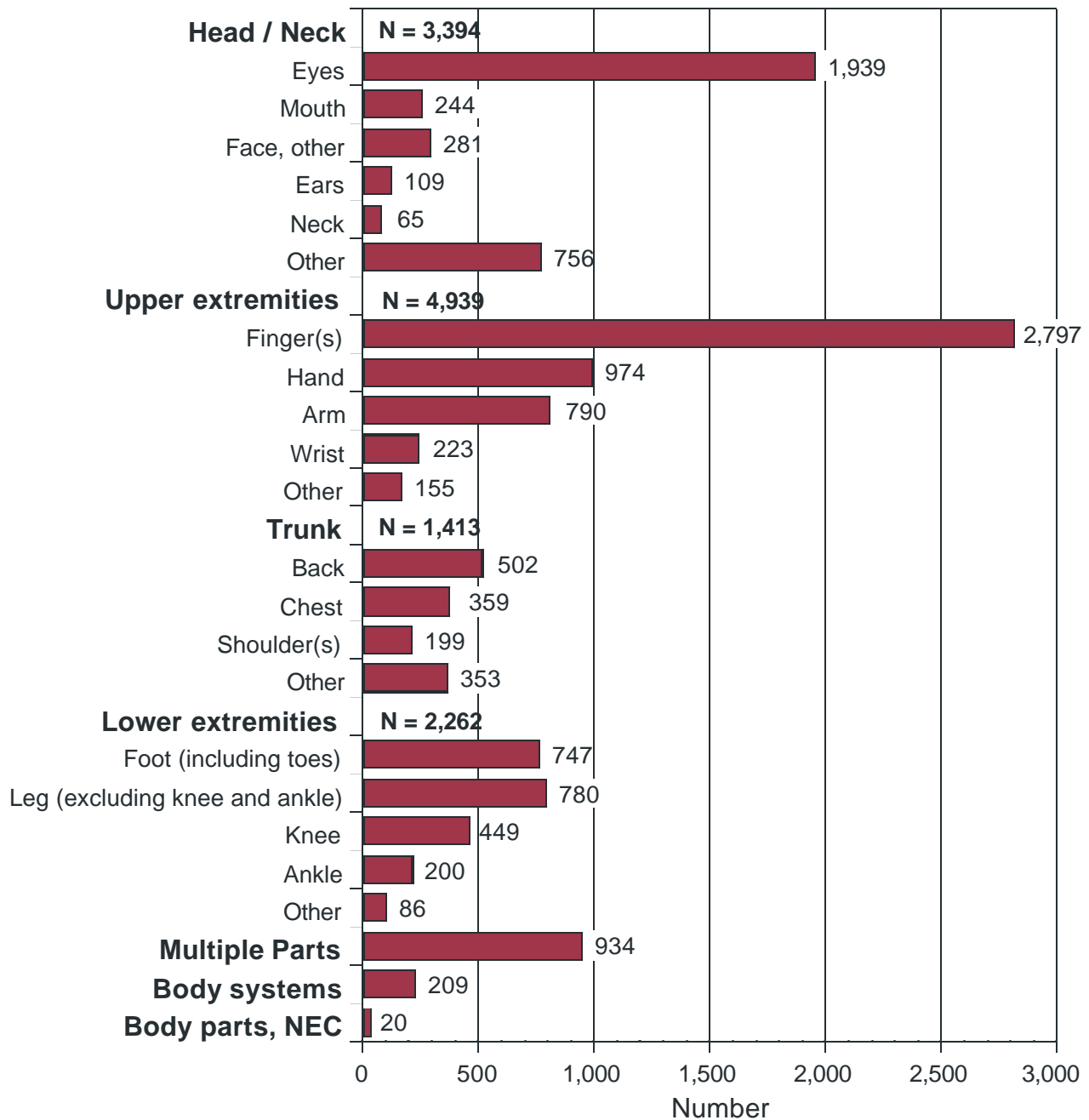


Figure 4E-10.—Sand and gravel operators: number of (nonfatal) nonstrain injuries by body part injured, 1986-1995.
(Source: MSHA data)

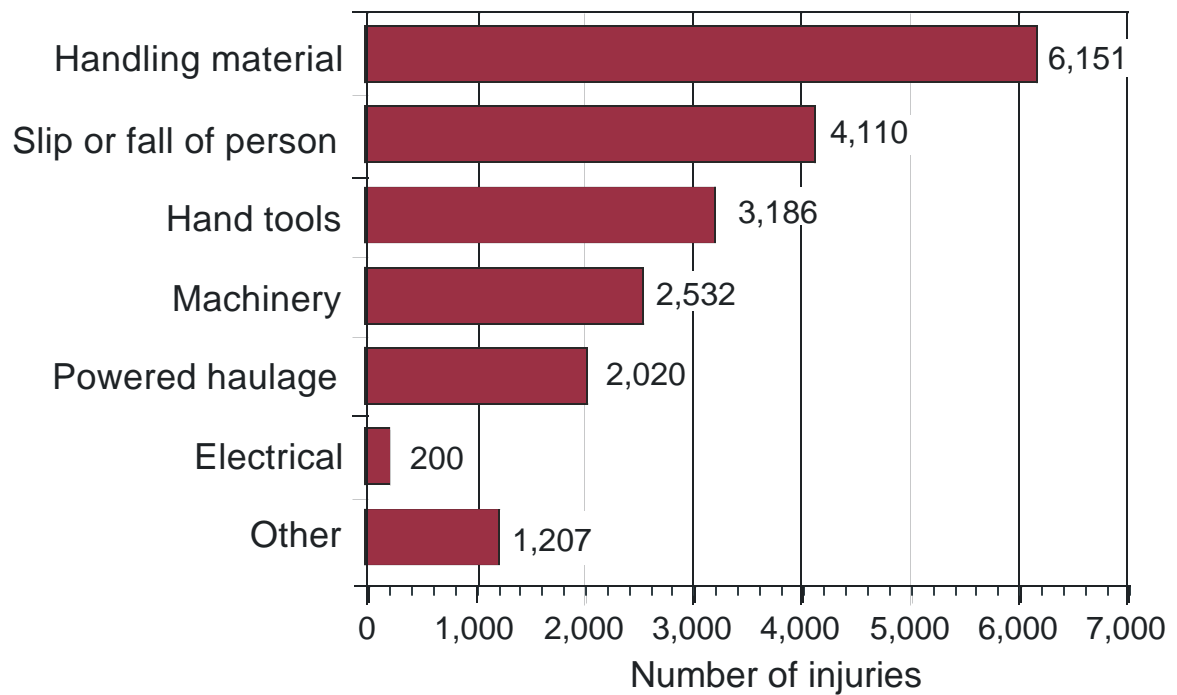


Figure 4E-11.—Sand and gravel operators: number of nonfatal injuries by MSHA accident classification, 1986-1995. (Source: MSHA data)

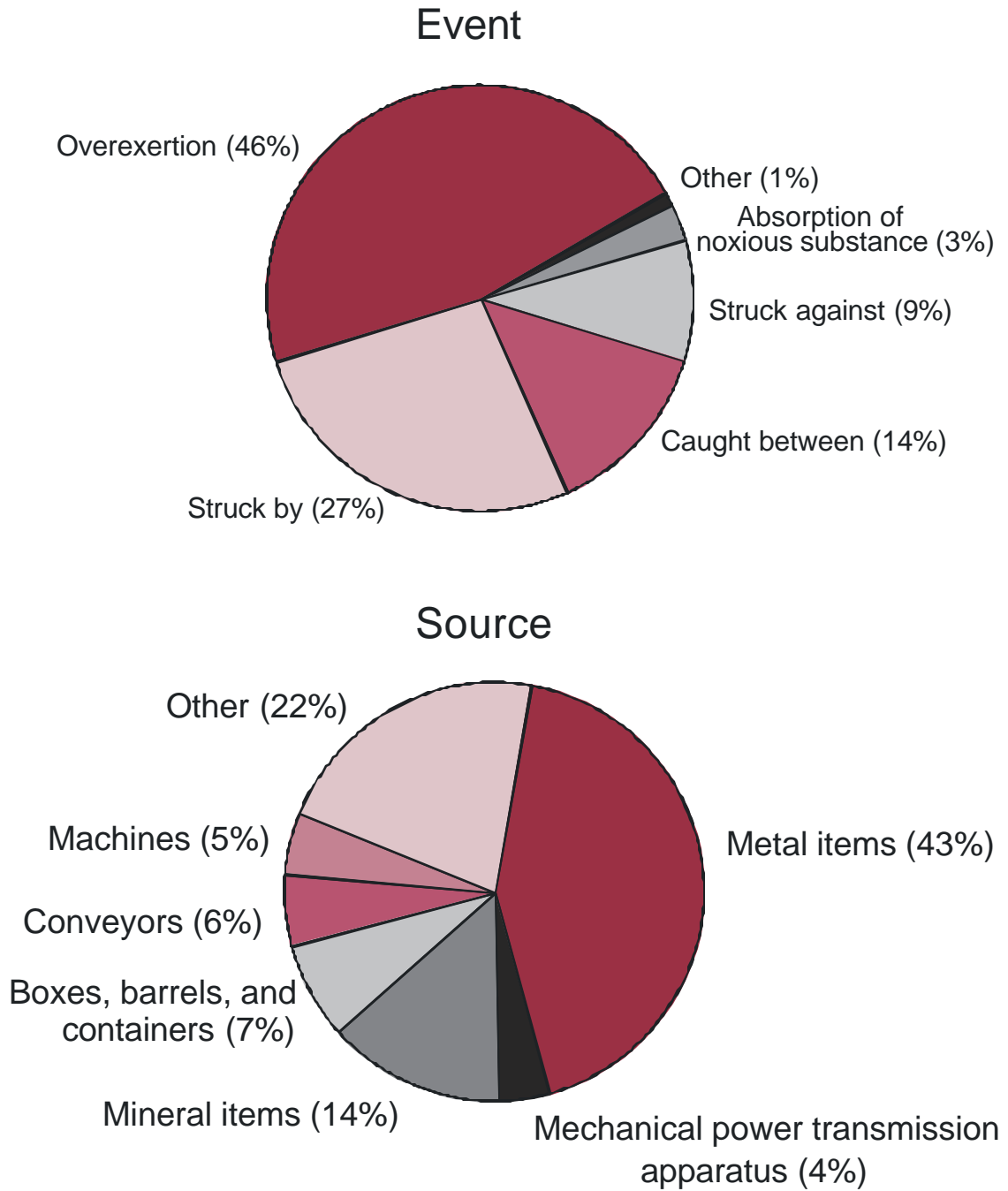


Figure 4E-12.—Sand gravel operators: nonfatal material handling injuries, 1986-1995. Percent of injuries by event resulting in injury and by source of injury (n = 6,151). (Source: MSHA data)

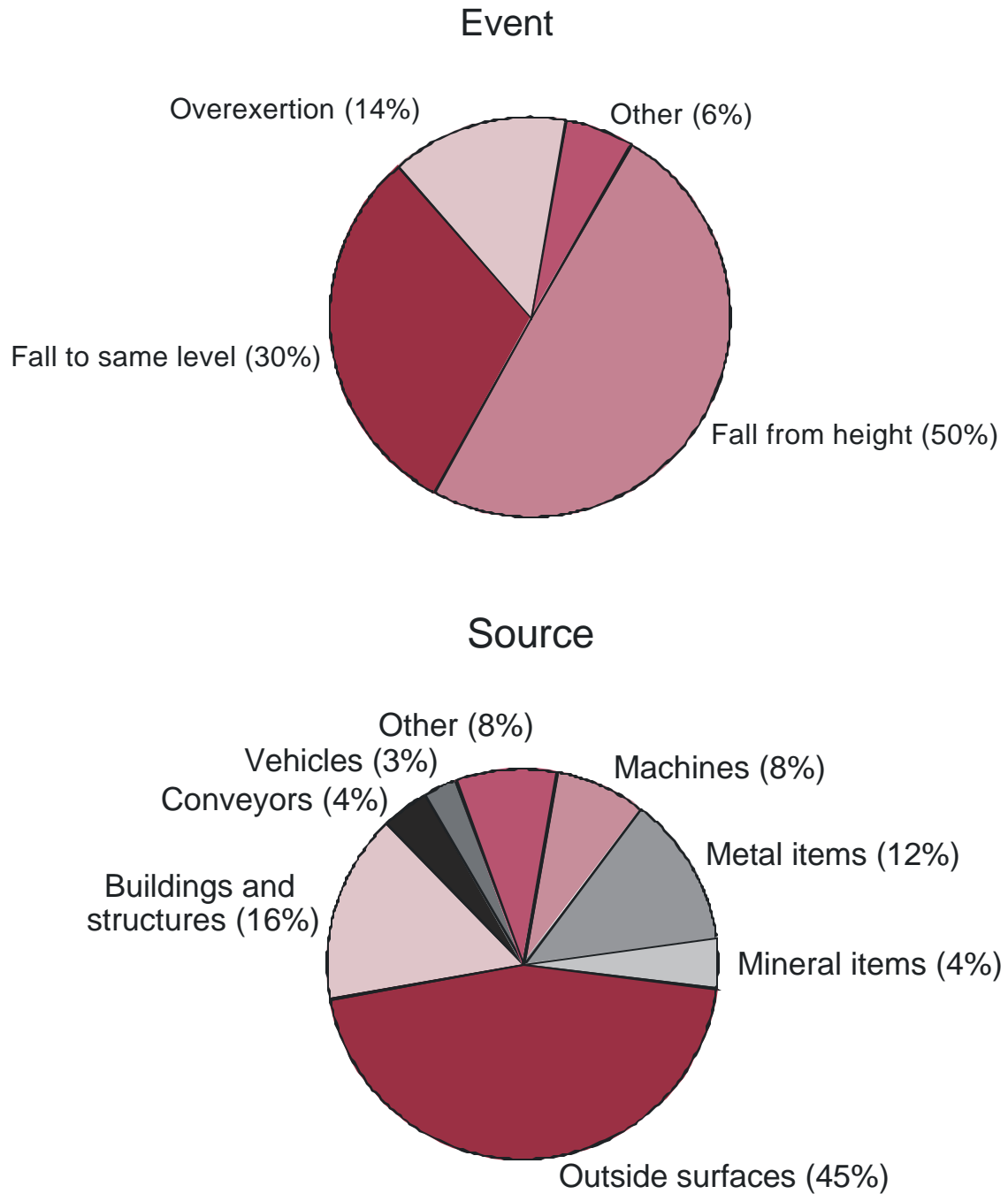


Figure 4E-13.—Sand and gravel operators: nonfatal fall injuries, 1986-1995. Percent of injuries by event resulting in injury and by source of injury (n = 4,110). (Source: MSHA data)

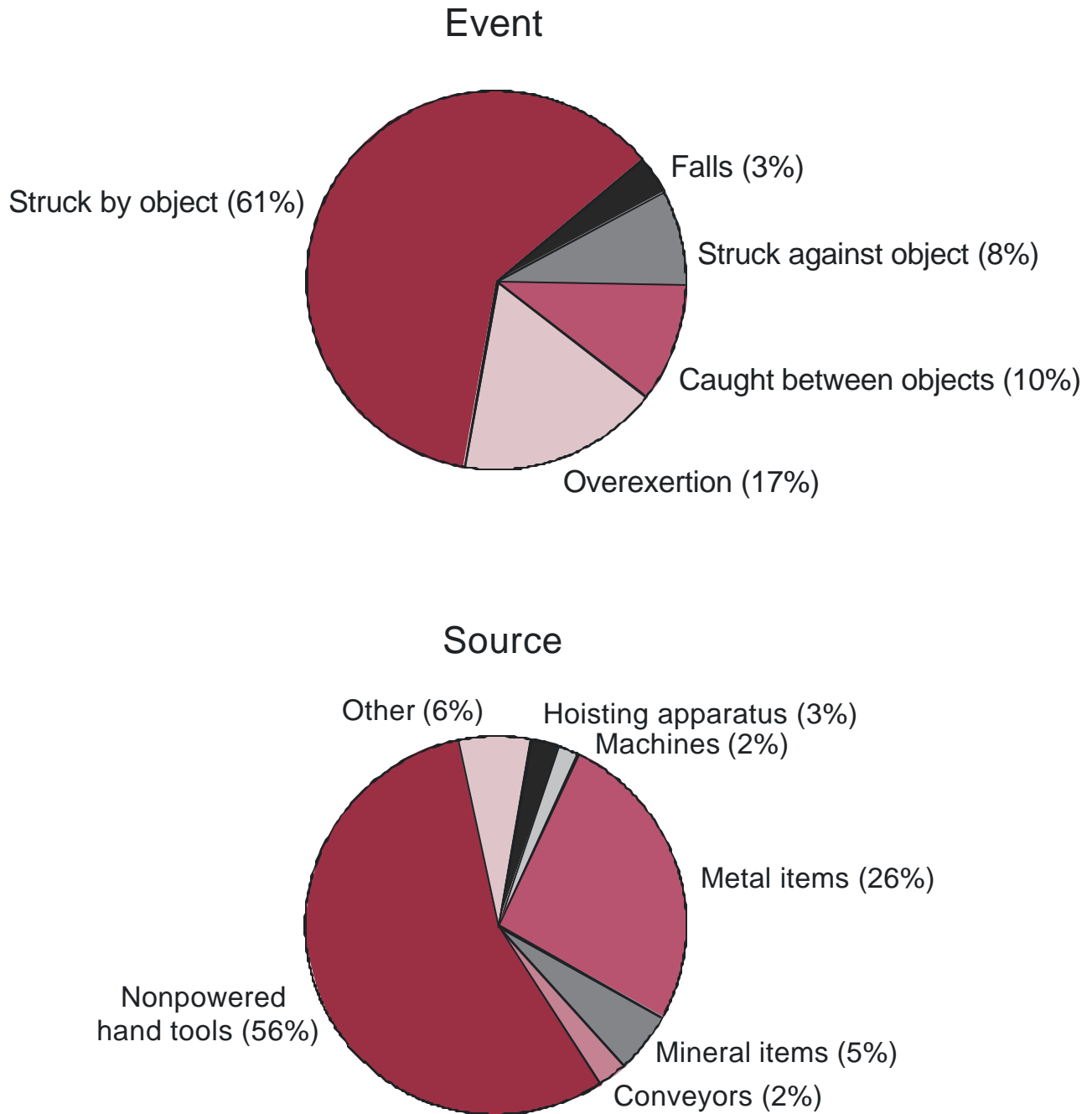


Figure 4E-14.—Sand and gravel operators: nonfatal hand tool injuries, 1986-1995. Percent of injuries by event resulting in injury and by source of injury (n = 3,186). (Source: MSHA data)

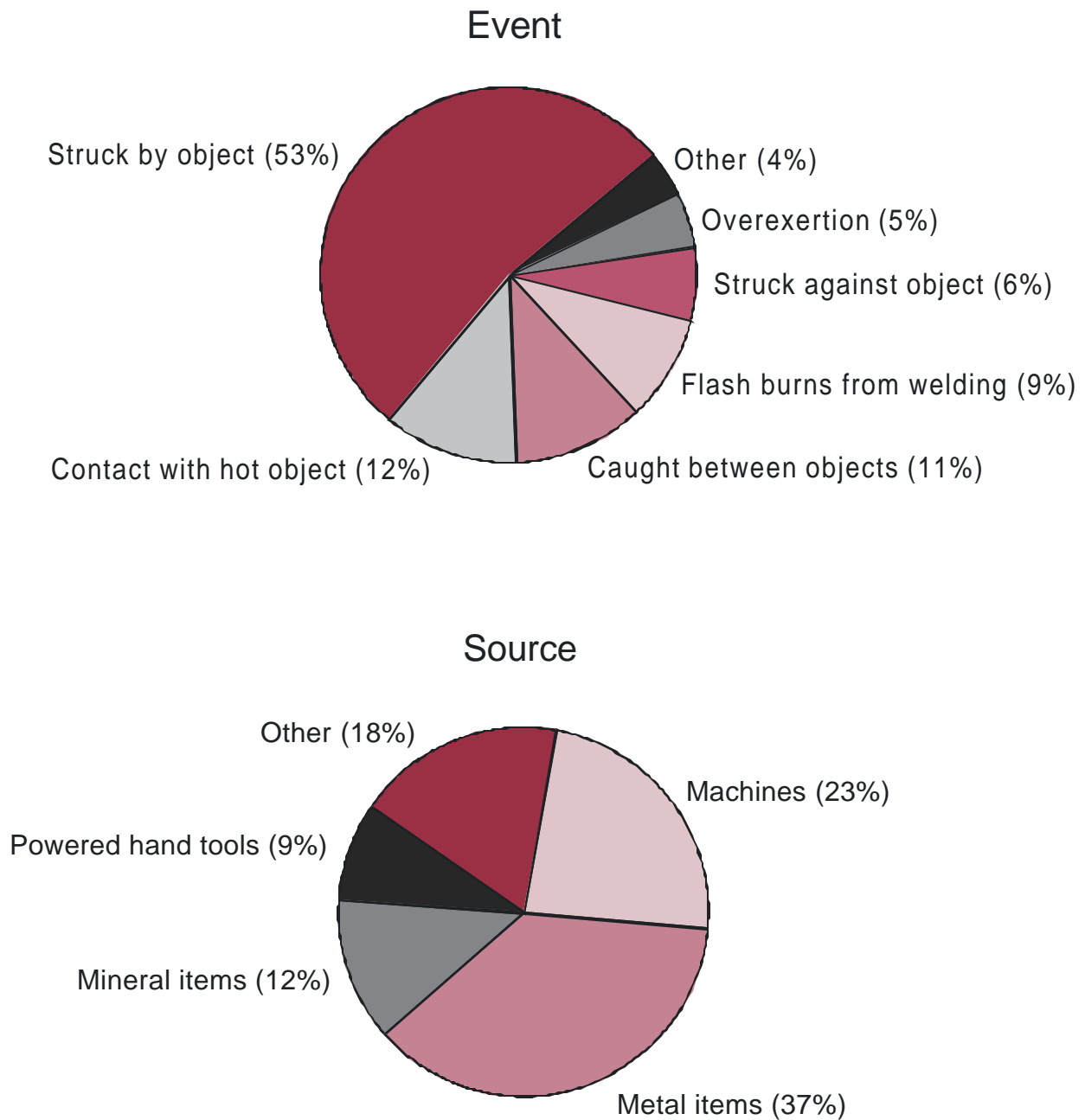


Figure 4E-15.—Sand and gravel operators: nonfatal machine injuries, 1986-1995. Percent of injuries by event resulting in injury and by source of injury (n = 2,532). (Source: MSHA data)

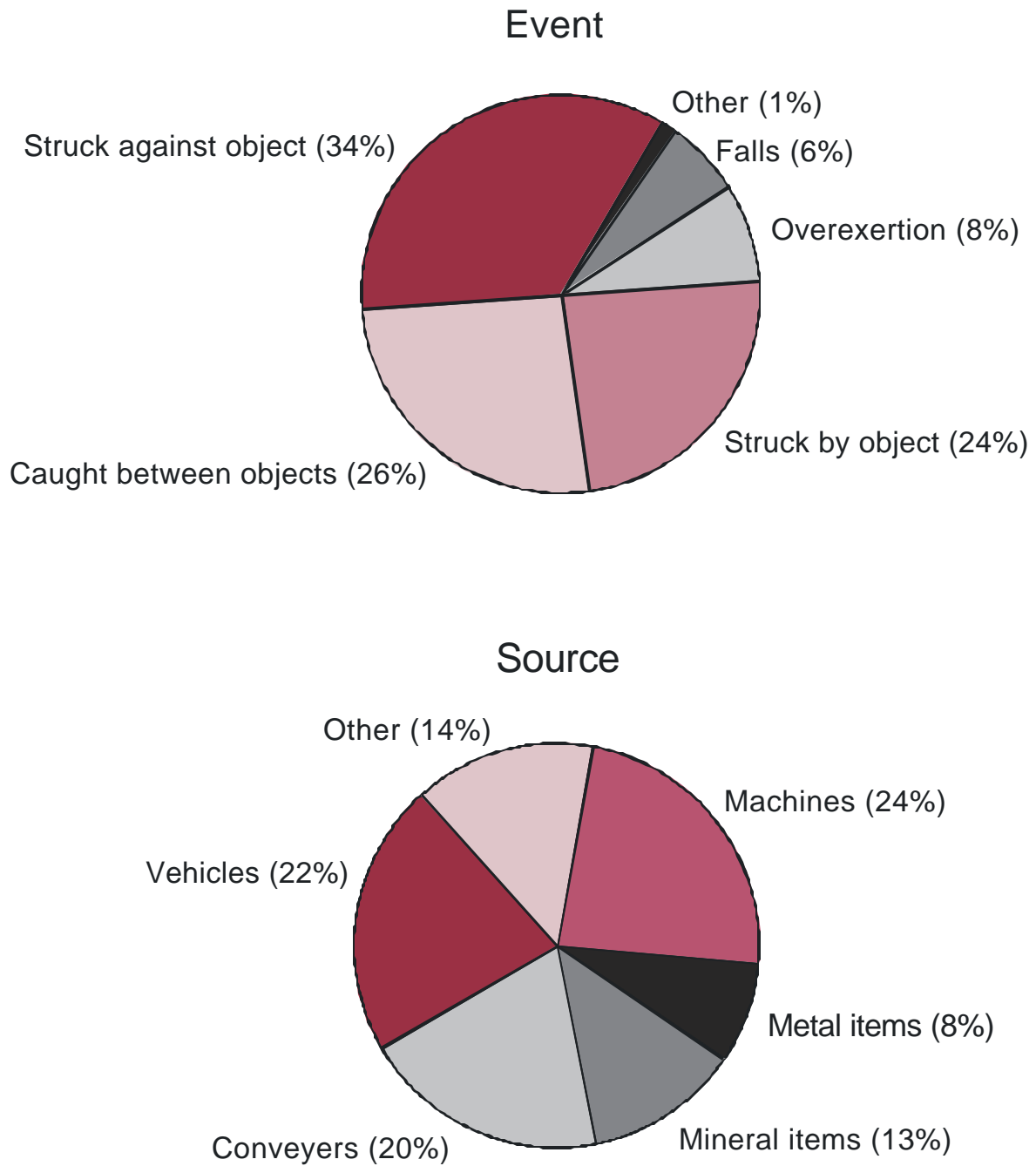


Figure 4E-16.—Sand and gravel operators: nonfatal powered haulage injuries, 1986-1995. Percent of injuries by event resulting in injury and by source of injury (n = 2,020). (Source: MSHA data)

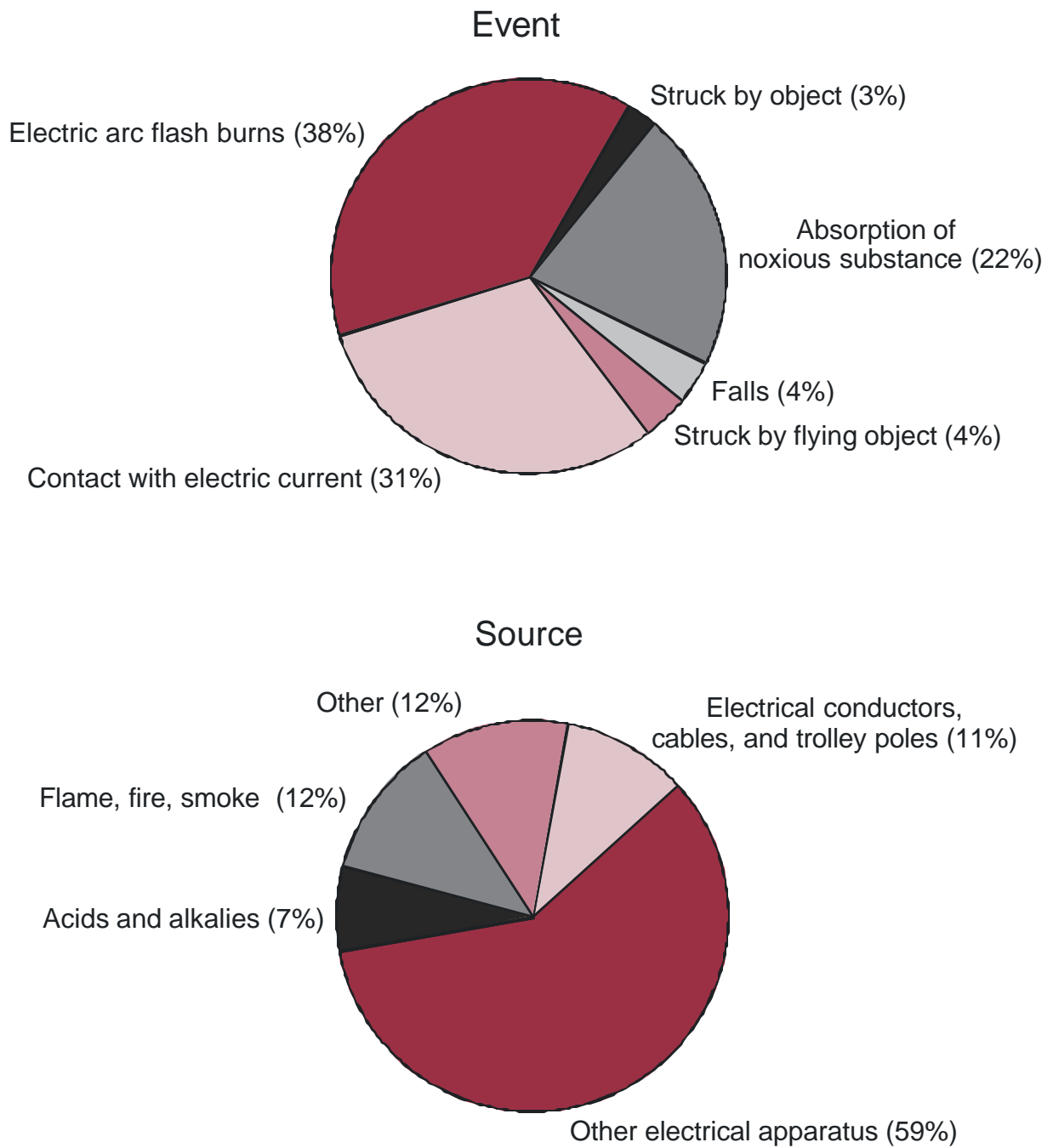


Figure 4E-17.—Sand and gravel operators: nonfatal electrical injuries, 1986-1995. Percent of injuries by event resulting in injury and by source of injury (n = 200). (Source: MSHA data)